

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 09/880,573B
Source: 1FW16
Date Processed by STIC: 1/30/05

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 09/880,573B

CRF Edit Date: 1/30/05
Edited by: [signature]

___ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

___ Corrected the SEQ ID NO. Sequence numbers edited were:

___ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

___ Deleted: invalid beginning/end-of-file text ; page numbers

___ Inserted mandatory headings/numeric identifiers, specifically:

___ Moved responses to same line as heading/numeric identifier, specifically:

___ Other:



IFW16

RAW SEQUENCE LISTING

DATE: 01/30/2005

PATENT APPLICATION: US/09/880,573B

TIME: 11:52:01

Input Set : A:\37501 Sequence Listing.txt

Output Set: N:\CRF4\01302005\I880573B.raw

SEQUENCE LISTING

4 (1) GENERAL INFORMATION:

6 (i) APPLICANT: Suzuki, Shintaro

8 (ii) TITLE OF INVENTION: Protocadherin Materials and Methods

10 (iii) NUMBER OF SEQUENCES: 115

12 (iv) CORRESPONDENCE ADDRESS:

13 (A) ADDRESSEE: Marshall, O'Toole, Gerstein, Murray, &
14 Borun

15 (B) STREET: 233 South Wacker, 6300 Sears Tower

16 (C) CITY: Chicago

17 (D) STATE: Illinois

18 (E) COUNTRY: USA

19 (F) ZIP: 60606

21 (v) COMPUTER READABLE FORM:

22 (A) MEDIUM TYPE: Floppy disk

23 (B) COMPUTER: IBM PC compatible

24 (C) OPERATING SYSTEM: PC-DOS/MS-DOS

25 (D) SOFTWARE: Patent In Release #1.0, Version #1.25

27 (vi) CURRENT APPLICATION DATA:

C--> 28 (A) APPLICATION NUMBER: US/09/880,573B

C--> 29 (B) FILING DATE: 13-Jun-2001

30 (C) CLASSIFICATION:

32 (vii) PRIOR APPLICATION DATA:

33 (A) APPLICATION NUMBER: US 08/263,161

34 (B) FILING DATE: 27 JUN 1994

36 (viii) ATTORNEY/AGENT INFORMATION:

37 (A) NAME: Greta E. Noland

38 (B) REGISTRATION NUMBER: 35,302

39 (C) REFERENCE/DOCKET NUMBER: 27866/34703

41 (ix) TELECOMMUNICATION INFORMATION:

42 (A) TELEPHONE: 312/474-6300

43 (B) TELEFAX: 312/474-0448

44 (C) TELEX: 25-3856

Does Not Comply
Corrected Diskette Needed

ERRORED SEQUENCES

6018 (2) INFORMATION FOR SEQ ID NO: 115:

6020 (i) SEQUENCE CHARACTERISTICS:

6021 (A) LENGTH: 616 amino acids

6022 (B) TYPE: amino acid

6023 (D) TOPOLOGY: linear

6025 (ii) MOLECULE TYPE: protein

P.3

RAW SEQUENCE LISTING

DATE: 01/30/2005

PATENT APPLICATION: US/09/880,573B

TIME: 11:52:02

Input Set : A:\37501 Sequence Listing.txt

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```

6027      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115:
6029 Glu Ala Ala His His Leu Val Leu Thr Ala Ser Asp Gly Gly Lys Pro
6030      1          5          10          15
6032 Pro Arg Ser Ser Thr Val Arg Ile His Val Thr Val Leu Asp Thr Asn
6033          20          25          30
6035 Asp Asn Ala Pro Val Phe Pro His Pro Ile Tyr Arg Val Lys Val Leu
6036          35          40          45
6038 Glu Asn Met Pro Pro Gly Thr Arg Leu Leu Thr Val Thr Ala Ser Asp
6039          50          55          60
6040 Pro Asp Glu Gly Ile Asn Gly Lys Val Ala Tyr Lys Phe Arg Lys Ile
6041      65          70          75          80
6043 Asn Glu Lys Gln Thr Pro Leu Phe Gln Leu Asn Glu Asn Thr Gly Glu
6044          85          90          95
6046 Ile Ser Ile Ala Lys Ser Leu Asp Tyr Glu Glu Cys Ser Phe Tyr Glu
6047          100         105         110
6049 Met Glu Ile Gln Ala Glu Asp Val Gly Ala Leu Leu Gly Arg Thr Lys
6050          115         120         125
6052 Leu Leu Ile Ser Val Glu Asp Val Asn Asp Asn Arg Pro Glu Val Ile
6053          130         135         140
6055 Ile Thr Ser Leu Phe Ser Pro Val Leu Glu Asn Ser Leu Pro Gly Thr
6056      145         150         155         160
6058 Val Ile Ala Phe Leu Ser Val His Asp Gln Asp Ser Gly Lys Asn Gly
6059          165         170         175
6061 Gln Val Val Cys Tyr Thr Arg Asp Asn Leu Pro Phe Lys Leu Glu Lys
6062          180         185         190
6064 Ser Ile Gly Asn Tyr Tyr Arg Leu Val Thr Arg Lys Tyr Leu Asp Arg
6065          195         200         205
6067 Glu Asn Val Ser Ile Tyr Asn Ile Thr Val Met Ala Ser Asp Leu Gly
6068          210         215         220
6070 Thr Pro Pro Leu Ser Thr Glu Thr Gln Ile Ala Leu His Val Ala Asp
6071      225         230         235         240
6073 Ile Asn Asp Asn Pro Pro Thr Phe Pro His Ala Ser Tyr Ser Ala Tyr
6074          245         250         255
6076 Ile Leu Glu Asn Asn Leu Arg Gly Ala Ser Ile Phe Ser Leu Thr Ala
6077          260         265         270
6079 His Asp Pro Asp Ser Gln Glu Asn Ala Gln Val Thr Tyr Ser Val Thr
6080          275         280         285
6082 Glu Asp Thr Leu Gln Gly Ala Pro Leu Ser Ser Tyr Ile Ser Ile Asn
6083          290         295         300
6085 Ser Asp Thr Gly Val Leu Tyr Ala Leu Gln Ser Phe Asp Tyr Glu Gln
6086      305         310         315         320
6088 Ile Arg Asp Leu Gln Leu Leu Val Thr Ala Ser Asp Ser Gly Asp Pro
6089          325         330         335
6091 Pro Leu Ser Ser Asn Met Ser Leu Ser Leu Phe Val Leu Asp Gln Asn
6092          340         345         350
6094 Asp Asn Ala Pro Glu Ile Leu Tyr Pro Ala Leu Pro Thr Asp Gly Ser
6095          355         360         365
6097 Thr Gly Val Glu Leu Ala Pro Arg Ser Ala Glu Arg Gly Tyr Leu Val
6098          370         375         380

```

RAW SEQUENCE LISTING

DATE: 01/30/2005

PATENT APPLICATION: US/09/880,573B

TIME: 11:52:02

Input Set : A:\37501 Sequence Listing.txt

Output Set: N:\CRF4\01302005\I880573B.raw

```

6101 Thr Lys Val Val Ala Val Asp Arg Asp Ser Gly Gln Asn Ala Trp Leu
6102 385                               390                               395                               400
6104 Ser Tyr Arg Leu Leu Lys Ala Ser Glu Pro Gly Leu Phe Ser Val Gly
6105                               405                               410                               415
6107 Leu His Thr Gly Glu Val Arg Thr Ala Arg Ala Leu Leu Asp Arg Asp
6108                               420                               425                               430
6110 Ala Leu Lys Gln Ser Leu Val Val Ala Val Gln Asp His Gly Gln Pro
6111                               435                               440                               445
6113 Pro Leu Ser Ala Thr Val Thr Leu Thr Val Ala Val Ala Asp Ser Ile
6114                               450                               455                               460
6116 Pro Glu Val Leu Thr Glu Leu Gly Ser Leu Lys Pro Ser Val Asp Pro
6117 465                               470                               475                               480
6119 Asn Asp Ser Ser Leu Thr Leu Tyr Leu Val Val Ala Val Ala Ala Ile
6120                               485                               490                               495
6122 Ser Cys Val Phe Leu Ala Phe Val Ala Val Leu Leu Gly Leu Arg Leu
6123                               500                               505                               510
6125 Arg Arg Trp His Lys Ser Arg Leu Leu Gln Asp Ser Gly Gly Arg Leu
6126                               515                               520                               525
6128 Val Gly Val Pro Ala Ser His Phe Val Gly Val Glu Glu Val Gln Ala
6129                               530                               535                               540
6131 Phe Leu Gln Thr Tyr Ser Gln Glu Val Ser Leu Thr Ala Asp Ser Arg
6132 545                               550                               555                               560
6134 Lys Ser His Leu Ile Phe Pro Gln Pro Asn Tyr Ala Asp Met Leu Ile
6135                               565                               570                               575
6137 Ser Gln Glu Gly Cys Glu Lys Asn Asp Ser Leu Leu Thr Ser Val Asp
6138                               580                               585                               590
6140 Phe His Glu Tyr Lys Asn Glu Ala Asp His Gly Gln Val Ser Leu Val
6141                               595                               600                               605
6143 Leu Cys Leu Leu Leu Ile Ser Arg
6144                               610                               615

```

E--> 6147 1

VERIFICATION SUMMARYPATENT APPLICATION: **US/09/880,573B**

DATE: 01/30/2005

TIME: 11:52:03

Input Set : **A:\37501 Sequence Listing.txt**Output Set: **N:\CRF4\01302005\I880573B.raw**

L:28 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:29 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:55 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=1
L:74 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=2
L:985 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=41
L:991 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0
L:1002 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=42
L:1008 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:0
L:1019 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=43
L:1025 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:0
L:3381 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:100 after pos.:0
L:3397 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:101 after pos.:0
L:6147 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:115



IFW16

RAW SEQUENCE LISTING

DATE: 01/30/2005

PATENT APPLICATION: US/09/880,573B

TIME: 18:46:59

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\01302005\I880573B.raw

SEQUENCE LISTING

```

4 (1) GENERAL INFORMATION:
6   (i) APPLICANT: Suzuki, Shintaro
8   (ii) TITLE OF INVENTION: Protocadherin Materials and Methods
10  (iii) NUMBER OF SEQUENCES: 115
12  (iv) CORRESPONDENCE ADDRESS:
13      (A) ADDRESSEE: Marshall, O'Toole, Gerstein, Murray, &
14                  Borun
15      (B) STREET: 233 South Wacker, 6300 Sears Tower
16      (C) CITY: Chicago
17      (D) STATE: Illinois
18      (E) COUNTRY: USA
19      (F) ZIP: 60606
21  (v) COMPUTER READABLE FORM:
22      (A) MEDIUM TYPE: Floppy disk
23      (B) COMPUTER: IBM PC compatible
24      (C) OPERATING SYSTEM: PC-DOS/MS-DOS
25      (D) SOFTWARE: Patent In Release #1.0, Version #1.25
27  (vi) CURRENT APPLICATION DATA:
C--> 28      (A) APPLICATION NUMBER: US/09/880,573B
C--> 29      (B) FILING DATE: 13-Jun-2001
30      (C) CLASSIFICATION:
32  (vii) PRIOR APPLICATION DATA:
33      (A) APPLICATION NUMBER: US 08/263,161
34      (B) FILING DATE: 27 JUN 1994
36  (viii) ATTORNEY/AGENT INFORMATION:
37      (A) NAME: Greta E. Noland
38      (B) REGISTRATION NUMBER: 35,302
39      (C) REFERENCE/DOCKET NUMBER: 27866/34703
41  (ix) TELECOMMUNICATION INFORMATION:
42      (A) TELEPHONE: 312/474-6300
43      (B) TELEFAX: 312/474-0448
44      (C) TELEX: 25-3856
47  (2) INFORMATION FOR SEQ ID NO: 1:
49      (i) SEQUENCE CHARACTERISTICS:
50          (A) LENGTH: 17 base pairs
51          (B) TYPE: nucleic acid
52          (C) STRANDEDNESS: single
53          (D) TOPOLOGY: linear
W--> 55      (ii) MOLECULE TYPE: DNA
62      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
64 AARSSNNTNG AYTRYGA
66 (2) INFORMATION FOR SEQ ID NO: 2:

```

17

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/880,573B

DATE: 01/30/2005
TIME: 18:46:59

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\01302005\I880573B.raw

```

68      (i) SEQUENCE CHARACTERISTICS:
69          (A) LENGTH: 17 base pairs
70          (B) TYPE: nucleic acid
71          (C) STRANDEDNESS: single
72          (D) TOPOLOGY: linear
W--> 74      (ii) MOLECULE TYPE: DNA
76          (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
78      TTRCTRTTRC GNGGNNN
17
80      (2) INFORMATION FOR SEQ ID NO: 3:
82          (i) SEQUENCE CHARACTERISTICS:
83              (A) LENGTH: 131 base pairs
84              (B) TYPE: nucleic acid
85              (C) STRANDEDNESS: single
86              (D) TOPOLOGY: linear
88          (ii) MOLECULE TYPE: cDNA
92          (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
94      AAGGGAGTGG ACTTTGAGGA GCAGCCTGAG CTTAGTCTCA TCCTCACGGC TTTGGATGGA
60
96      GGGACTCCAT CCAGGTCTGG GACTGCATTG GTTCAAGTGG AAGTCATAGA TGCCAATGAC
120
98      AACGCACCGT A
131
100     (2) INFORMATION FOR SEQ ID NO: 4:
102         (i) SEQUENCE CHARACTERISTICS:
103             (A) LENGTH: 43 amino acids
104             (B) TYPE: amino acid
105             (C) STRANDEDNESS: single
106             (D) TOPOLOGY: linear
108         (ii) MOLECULE TYPE: protein
112         (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
114         Lys Gly Val Asp Phe Glu Glu Gln Pro Glu Leu Ser Leu Ile Leu Thr
115             1             5             10             15
117         Ala Leu Asp Gly Gly Thr Pro Ser Arg Ser Gly Thr Ala Leu Val Gln
118             20             25             30
120         Val Glu Val Ile Asp Ala Asn Asp Asn Ala Pro
121             35             40
123     (2) INFORMATION FOR SEQ ID NO: 5:
125         (i) SEQUENCE CHARACTERISTICS:
126             (A) LENGTH: 131 base pairs
127             (B) TYPE: nucleic acid
128             (C) STRANDEDNESS: single
129             (D) TOPOLOGY: linear
131         (ii) MOLECULE TYPE: cDNA
134         (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
136      AAACGCATGG ATTTTCGAGGA GTCTTCCTCC TACCAGATCT ATGTGCAAGC TACTGACCGG
60
138      GGACCAGTAC CCATGGCGGG TCATTGCAAG GTGTTGGTGG ACATTATAGA TGTGAACGAC
120
140      AACGCACCTA A
131
142     (2) INFORMATION FOR SEQ ID NO: 6:
144         (i) SEQUENCE CHARACTERISTICS:
145             (A) LENGTH: 43 amino acids
146             (B) TYPE: amino acid
147             (C) STRANDEDNESS: single

```

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PATENT APPLICATION: US/09/880,573B

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148         (D) TOPOLOGY: linear
150     (ii) MOLECULE TYPE: protein
154     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
156     Lys Ala Met Asp Phe Glu Glu Ser Ser Tyr Gln Ile Tyr Val Gln
157         1           5           10           15
159     Ala Thr Asp Arg Gly Pro Val Pro Met Ala Gly His Cys Lys Val Leu
160         20           25           30
162     Val Asp Ile Ile Asp Val Asn Asp Asn Ala Pro
163         35           40
165 (2) INFORMATION FOR SEQ ID NO: 7:
167     (i) SEQUENCE CHARACTERISTICS:
168         (A) LENGTH: 131 base pairs
169         (B) TYPE: nucleic acid
170         (C) STRANDEDNESS: single
171         (D) TOPOLOGY: linear
173     (ii) MOLECULE TYPE: cDNA
177     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
179     AAGCGACTGG ACTTTGAGAC CCTGCAGACC TTCGAGTTCA GCGTGGGTGC CACAGACCAT      60
181     GGCTCCCCCT CGCTCCGCAG TCAGGCTCTG GTGCGCGTGG TGGTGCTGGA CCACAATGAC      120
183     AATGCCCCCA A                                          131
184 (2) INFORMATION FOR SEQ ID NO: 8:
186     (i) SEQUENCE CHARACTERISTICS:
187         (A) LENGTH: 43 amino acids
188         (B) TYPE: amino acid
189         (C) STRANDEDNESS: single
190         (D) TOPOLOGY: linear
192     (ii) MOLECULE TYPE: protein
196     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
198     Lys Arg Leu Asp Phe Glu Thr Leu Gln Thr Phe Glu Phe Ser Val Gly
199         1           5           10           15
201     Ala Thr Asp His Gly Ser Pro Ser Leu Arg Ser Gln Ala Leu Val Arg
202         20           25           30
204     Val Val Val Leu Asp His Asn Asp Asn Ala Pro
205         35           40
207 (2) INFORMATION FOR SEQ ID NO: 9:
209     (i) SEQUENCE CHARACTERISTICS:
210         (A) LENGTH: 131 base pairs
211         (B) TYPE: nucleic acid
212         (C) STRANDEDNESS: single
213         (D) TOPOLOGY: linear
215     (ii) MOLECULE TYPE: cDNA
219     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
221     AAGGGCCTGG ATTACGAGGC ACTGCAGTCC TTCGAGTTCT ACGTGGGCGC TACAGATGGA      60
223     GGCTCACCCG CGCTCAGCAG CCAGACTCTG GTGCGGATGG TGGTGCTGGA TGACAACGAC      120
225     AACGCCCCTA A                                          131
227 (2) INFORMATION FOR SEQ ID NO: 10:
229     (i) SEQUENCE CHARACTERISTICS:
230         (A) LENGTH: 43 amino acids
231         (B) TYPE: amino acid

```

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232         (C) STRANDEDNESS: single
233         (D) TOPOLOGY: linear
235     (ii) MOLECULE TYPE: protein
239     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
241     Lys Gly Leu Asp Tyr Glu Ala Leu Gln Ser Phe Glu Phe Tyr Val Gly
242         1             5             10             15
245     Ala Thr Asp Gly Gly Ser Pro Ala Leu Ser Ser Gln Thr Leu Val Arg
246         20             25             30
248     Met Val Val Leu Asp Asp Asn Asp Asn Ala Pro
249         35             40
251 (2) INFORMATION FOR SEQ ID NO: 11:
253     (i) SEQUENCE CHARACTERISTICS:
254         (A) LENGTH: 131 base pairs
255         (B) TYPE: nucleic acid
256         (C) STRANDEDNESS: single
257         (D) TOPOLOGY: linear
259     (ii) MOLECULE TYPE: cDNA
263     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
265     AAGGCGTTTG ATTTTGAGGA TCAGAGAGAG TTCCAGCTAA CCGCTCATAT AAACGACGGA        60
267     GGTACCCCGG TTTTGGCCAC CAACATCAGC GTGAACATAT TTGTTACTGA CCGCAATGAC        120
269     AACGCCCCGC A                                131
271 (2) INFORMATION FOR SEQ ID NO: 12:
273     (i) SEQUENCE CHARACTERISTICS:
274         (A) LENGTH: 43 amino acids
275         (B) TYPE: amino acid
276         (C) STRANDEDNESS: single
277         (D) TOPOLOGY: linear
279     (ii) MOLECULE TYPE: protein
283     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
285     Lys Ala Phe Asp Phe Glu Asp Gln Arg Glu Phe Gln Leu Thr Ala His
286         1             5             10             15
288     Ile Asn Asp Gly Gly Thr Pro Val Leu Ala Thr Asn Ile Ser Val Asn
289         20             25             30
291     Ile Phe Val Thr Asp Arg Asn Asp Asn Ala Pro
292         35             40
294 (2) INFORMATION FOR SEQ ID NO: 13:
296     (i) SEQUENCE CHARACTERISTICS:
297         (A) LENGTH: 131 base pairs
298         (B) TYPE: nucleic acid
299         (C) STRANDEDNESS: single
300         (D) TOPOLOGY: linear
302     (ii) MOLECULE TYPE: cDNA
306     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
308     AAGGCGGTGG ATTACGAAAT CACCAAGTCC TATGAGATAG ATGTTCAAGC CCAAGATCTG        60
310     GGTCCCAATT CTATTCCTGC TCATTGCAAA ATTATAATTA AGGTCGTGGA TGTCAACGAC        120
312     AACGCTCCCA A                                131
314 (2) INFORMATION FOR SEQ ID NO: 14:
316     (i) SEQUENCE CHARACTERISTICS:
317         (A) LENGTH: 43 amino acids

```

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318         (B) TYPE: amino acid
319         (C) STRANDEDNESS: single
320         (D) TOPOLOGY: linear
322     (ii) MOLECULE TYPE: protein
326     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
328     Lys Ala Val Asp Tyr Glu Ile Thr Lys Ser Tyr Glu Ile Asp Val Gln
329     1           5           10          15
331     Ala Gln Asp Leu Gly Pro Asn Ser Ile Pro Ala His Cys Lys Ile Ile
332           20           25           30
334     Ile Lys Val Val Asp Val Asn Asp Asn Ala Pro
335           35           40
337 (2) INFORMATION FOR SEQ ID NO: 15:
339     (i) SEQUENCE CHARACTERISTICS:
340         (A) LENGTH: 135 base pairs
341         (B) TYPE: nucleic acid
342         (C) STRANDEDNESS: single
343         (D) TOPOLOGY: linear
345     (ii) MOLECULE TYPE: cDNA
349     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
351 TATGACCATG ATTACGAGAC AACCAAAGAA TATACACTGC GGATCCGGGC CCAGGATGGT      60
353 GGCCGGACTC CACTTTCCAA CGTCTCCGGT CTAGTAACCG TGCAGGTCCT AGACATCAAC      120
355 GACAATGCCC CCCC                                     135
357 (2) INFORMATION FOR SEQ ID NO: 16:
359     (i) SEQUENCE CHARACTERISTICS:
360         (A) LENGTH: 44 amino acids
361         (B) TYPE: amino acid
362         (C) STRANDEDNESS: single
363         (D) TOPOLOGY: linear
365     (ii) MOLECULE TYPE: protein
367     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:
369     Tyr Asp His Asp Tyr Glu Thr Thr Lys Glu Tyr Thr Leu Arg Ile Arg
370     1           5           10          15
372     Ala Gln Asp Gly Gly Arg Thr Pro Leu Ser Asn Val Ser Gly Leu Val
373           20           25           30
375     Thr Val Gln Val Leu Asp Ile Asn Asp Asn Ala Pro
376           35           40
378 (2) INFORMATION FOR SEQ ID NO: 17:
380     (i) SEQUENCE CHARACTERISTICS:
381         (A) LENGTH: 129 base pairs
382         (B) TYPE: nucleic acid
383         (C) STRANDEDNESS: single
384         (D) TOPOLOGY: linear
386     (ii) MOLECULE TYPE: cDNA
390     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
392 GGGGGGTCGA TTACGAGGAG AACGGCATGT TAGAGATCGA CGTGCAGGCC AGAGACCTAG      60
394 GACCTAACCC AATTCCAGCC CATTGCAAGG TCACAGTCAA GTCATCGAC CGCAATGATA      120
396 ACGCCCCCA                                     129
398 (2) INFORMATION FOR SEQ ID NO: 18:
400     (i) SEQUENCE CHARACTERISTICS:

```